

# Normal distribution calculator

Enter mean, standard deviation and cutoff points and this calculator will find the area under normal distribution curve. The calculator will generate a **step by step** explanation along with the graphic representation of the area you want to find.

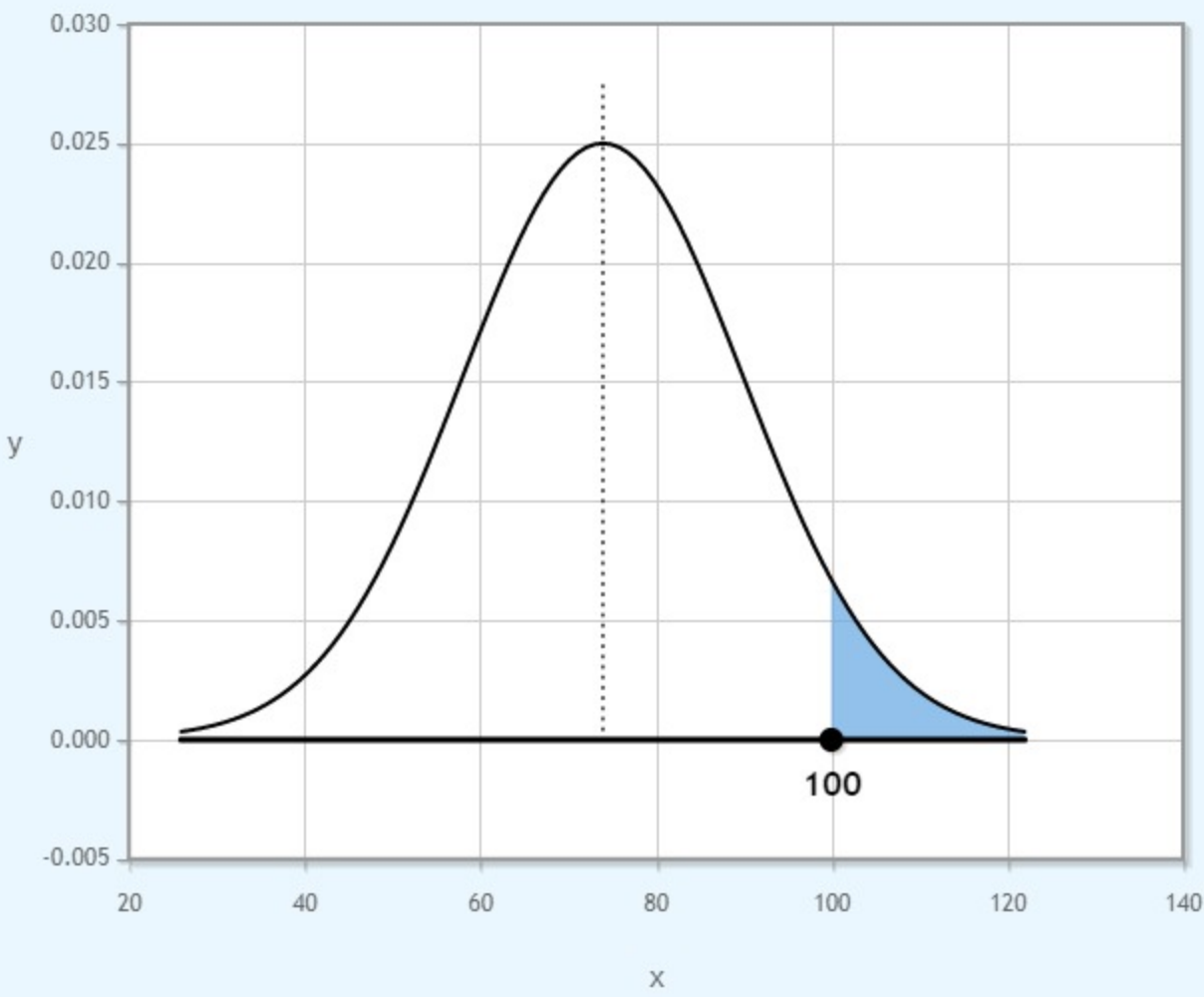
### solution

$$P(X > 100) = 0.0516$$

### explanation

**Step 1: Sketch the curve.**

The probability that  $X > 100$  is equal to the blue area under the curve.



**Step 2:**

Since  $\mu = 74$  and  $\sigma = 16$  we have:

$$P(X > 100) = P(X - \mu > 100 - 74) = P\left(\frac{X - \mu}{\sigma} > \frac{100 - 74}{16}\right)$$

Since  $Z = \frac{x - \mu}{\sigma}$  and  $\frac{100 - 74}{16} = 1.63$  we have:

$$P(X > 100) = P(Z > 1.63)$$

**Step 3:** Use the standard normal table to conclude that:


$$P(Z > 1.63) = 0.0516$$

**Note:** Visit the [Z - score calculator](#) for a step by step explanation on how to use the standard normal table.



## Normal Distribution Calculator

find the area under normal distribution curve

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If  $X$  is a normally distributed variable with mean  $\mu = 74$  and standard deviation  $\sigma = 16$  find one of the following probabilities:

- ☐  $P(\text{ } < X < \text{ })$
- ☒  $P(X > 100)$
- ☐  $P(X < \text{ })$

☐ Hide steps

Compute

